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STATUS OF FLORISTIC STUDIES IN INDIA—WITH SPECIAL REFERENCE TO SOUTHERN CIRCLE OF BOTANICAL SURVEY OF INDIA

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A survey of history of Botany in India reveals that the prevalent empirical knowledge of the medicinal virtues of the South Indian plants, passed on from generation to generation, had been the reason for the foreign traders, missioneries and other administrative officials to launch a systematic study of the plants of the region. The Portuguese were the fiist to arrive in India as merchants and establish themselves in Cochin in early 16th century followed by Dutch in the later half of the 17th century and by others, subsequently. In fact, the Dutch paid greater attention to Indian plants than the Portuguese; and the Dutch Governor of Malabar Heinrich Van Rheede tot Draakenstein was responsible for collection of data resulting in the publication of the monumental work 'Hortus Malabaricus' between 1686-1703, in twelve large folio volumes, depicting 794 drawings of Malabar plants with description and medicinal properties. Linneaus included these in his 'Species Plantarum'. But the scientific study of Indian Botany, more or less in the modern lines had been initiated in the South and is said to date from the arrival of John Gerard Koenig, a pupil of Linneaus, in 1768. He formed a society called the 'United Brothers'. It consisted of plant enthusiasts, mostly in the medical profession, *viz.* Jones, Fleming, Hunter, Anderson, Beny, John, Heyne, Klein, Buchanan-Hamilton, Rottler and Roxburgh, the 'Father of Indian Botany'.

It is not pertinent in this short paper to have an exhaustive account of the History of Indian Botany with special reference to .... South India. This is already available in the publication of Burkill (1965)—'*Chapters on the History of Botany in India*'. However, it is worthwhile to make an assessment of the achievement of Botanical Survey of India in the floristic studies of the Southern States ever since its establishment. As a result of extensive exploration during the past twenty years, about a lakh of specimens could be collected, with pertinent field data, processed and made into herbarium specimens. The study of these resulted in the publication of about 155 papers which include description of 55 new finds unknown to the botanical world hitherto. 350 species have been added by various workers in recent times to the published flora of the former Madras Presidency. Eversince the establishment of the Botanical Survey of India, there has been an upsurge in enthusiasm for floristic studies, in various university centres and local colleges and often for obtaining higher degrees. The Madras Herbarium of the Botanical Survey of India, Southern Circle, constitutes the center for practically all such taxonomic researches in South India. Consequently, more or less exhaustive studies of the flora of a few regions have been carried out, and yet others are being studied. 'Exotic flora of Kodaikanal' by Matthew, K. M.—1969, 'Flora of Bangalore Dt.' by Ramaswamy, S. V. and B. A. Razi—1973 and 'Flora of Hassan District', by Saldanha and others —1976 are the result of such studies. Many more such works from within the Botanical Survey of India as well as in other Institutions are expected to see the light of day, in the near future.

But, still the main source of knowledge of South Indian plants with special reference to Tamil Nadu, Kerala and Andhra Pradesh which come under the jurisdiction of Southern Circle rests with the 'Flora of British India' by J. D. Hooker and others (1872-1897)', 'Flora of Presidency of Madras', by J. S. Gamble and C. E. C. Fischer (1915-1936), 'Flora of South Indian Hill Stations' by Fyson (1932), 'The Forest Trees of Travancore' by T. F. Bourdillon (1893), and 'Flowering plants of Travancore' by M. Rama Rao (1914). It is high time to revise the flora of Gamble and write Floras for the States of Kerala and Andhra Pradesh. As a first step towards this, intensive study of floras of unknown as well as little known Districts of Tamil Nadu, Kerala and Andhra Pradesh has already been initiated by the Botanical Survey of India, many universities, colleges and other research institutions.

A preliminary analysis of the herbarium material available with us has brought to light that 115 species described from South do not have any representation in the Madras Herbarium. Still others are very poorly represented. The Herbarium has the types of many species described by the earlier contributors, as well as those described by the officers of Botanical Survey in recent times.

According to the present practice of field collection, it could be seen that rare plants are picked up often by chance during a general collection and their rarity is not observed in the field, but only afterwards in the herbarium. Consequently, neither adequate number of specimens have been collected nor critical observation of habit and habitat recorded at the time of collection in the field. Hence, it becomes imperative to acquire critical knowledge of species and groups before field collections are launched to unexplored and underexplored areas. Representation of collection from Kerala and Andhra Pradesh as a whole when compared to Tamil Nadu, is very poor. The representation of tree species from different types of vegetation from these Southern States in our herbarium is very inadequate.

So, the urgent mission of the Botanical Survey of India, Southern Circle is to plan intensive collection and study of plants in selected areas, such as the Western slopes of Western ghats in Kerala, and the hitherto inaccessible forests of Andhra Pradesh. And also to conduct intensive and extensive collection trips for the study of specific groups and families of economic importance, academic interest, and ethnobotanic value. Such intensive explorations are certainly bound to yield interesting discoveries of elements reported from other geographic regions far separated both by land and sea. In fact, recent intensive collection and critical study of Orchids from Nilgiri ranges has shown that out of about 200 species reported from the former Presidency of Madras (Kerala, Tamil Nadu, Karnataka, Andhra), 116 species including a few new ones could be collected from here alone. Fyson (1932) has dealt with only 60 species of Orchids. Out of this 116 species, about 33 species have their distribution in the Himalayas and 32 species share their distribution either in Malava or in Thailand.

The various integrated rural developmental projects of the Governments, having a bearing on plant life can be promoted substantially when the correct knowledge of the local floras, at the district level is achieved.

South India is one of the few regions in India where many of the species of the Flora are well illustrated. Robert Wight in his monumental work, 'Icones Plantarum Indiae Orientalis' had brought out within a span of 15 years (1838-53), 2, 101 plates of line drawings in six volumes. But out of the 4,516 species belonging to 1,305 genera under 176 families dealt in the Flora of Madras Presidency, only about 1,780 species have been represented in these drawings of Wight. The rest of the species are yet to be illustrated from fresh collections, a lacuna which must be removed without much delay, because of the extreme need of such work. It goes without saying, that faithful drawings facilitate more the correct conception of a species as to its individuality and identity—a knowledge which is the rock bottom of all researches, both in fundamental and applied branches—than even a very picturesque description from a veteran taxonomist, leave alone amateurs and students of other disciplines of botany. In fact, familiarity of the species through sight is more instantaneous, convincing, as well as enduring than through elaborate descriptions. Medicinal plant collectors and 'exporters who gather the raw materials through illiterate local agents are hardly benefited by technical descriptions. They often fail to get the genuine materials for want of knowledge of the correct identity of plant species sought for and this affects badly the export potentialities and hence the foreign exchange. This also affects other scientific investigations on the medicinal plants within our country. Another great advantage of having illustrations of the local plant species is that, while to collect and maintain a herbarium of all species at the disposal of every research centre, college and plant collector is rather impossible and uneconomic, they can be kept in book form for easy reference, to obtain the exomorphic characteristics of individual plants. Although laborious and time consuming, the work has already been initiated to gather fresh materials from different localities to make illustrations of left out South Indian plants as a supplement to Robert Wight's 'Icones'.